AMENDMENTS TO THE CLAIMS

1. (Original) A micromechanical apparatus having one or more electronically adjustable structures comprising:

a set having:

a first electrode supported on a substrate;

a second electrode supported substantially parallel from said first electrode, said second electrode being movable with respect to said first electrode whereby an electric potential applied between said first and second electrodes causes said second electrode to move toward said first electrode distance X, (X), where X is a nonlinear function of said potential, (V) and V is a representation of a desired value of X; and

means for linearizing the relationship between V and X.

2. (Original) The apparatus of claim 1 wherein one of said first and second electrodes is divided into n plural separate electrode segments which increase from a first area over which said force results to a final larger, nth such area according to a predetermined geometric progression which offsets the nonlinearization in said transfer function between X and V.

3. (Original) The apparatus of claim 2 wherein said nonlinear progression produces a doubling in the area between each segment from said first electrode segment area through each successive electrode segment to said nth electrode segment area thereby providing a second order adjustment in the transfer function between displacement X and applied potential V.

4. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims 1, ~~2 or 3~~ wherein a plurality of sets of said

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first and second electrodes are arranged in a two-dimensional array.

5. (Currently Amended) The apparatus of ~~any one of the preceding~~ claims ~~1-4~~ further comprising a reflective element supported by said second electrode substantially at a point of maximum deflection thereof in response to said applied potential.

6. (Original) The apparatus of claim 5 including means for applying a potential between first and second electrodes operative to reflect radiation over a range of angles corresponding to the deflection of each of said second electrodes in said array through phase delay wavefront steering.

7. (Original) The apparatus of claim 5 including means for applying a potential between said first and second electrodes operative to reflect radiation over a range of phase adjustments corresponding to the deflection of each of said second electrodes in said array through delayed phase reflection.

8. (Currently Amended) The apparatus of ~~any one of~~ claims ~~1-7~~ wherein said linearizing means further includes means for applying said potential, V, to selected ones of said electrode segments.

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9. (Currently Amended) The apparatus of ~~any one of~~ claim~~s~~ 1~~-8~~ wherein said means for linearizing includes means for varying the applied potential as a function of gap between said first and second electrodes.

10. (Original) The apparatus of claim 9 wherein said means for varying causes said potential to decrease as the spacing between said first and second electrodes decreases.

11. (Original) The apparatus of claim 6 wherein:

said drive means further includes means for applying said potential, V, to selected ones of said electrode segments; and

means for varying the voltage applied to said electrode segments are provided to increase the voltage between said first and second electrodes in synchronism with the application thereof to respective ones of said electrode segments.

12. (Original) The apparatus of claim 11 wherein said drive means includes means for controlling the application of said potential to each electrode segment according to states of digital bits of a digital signal.

13. (Currently Amended) The apparatus of claim~~s~~ 10, ~~11, or 12~~ further including means for varying the voltage applied to said electrode segments as a function of induced displacement comprising a plurality of current sources individually activated by digital signals synchronized to the activation of each of said plurality of segments, said current source increasing in magnitude from a first current level, corresponding to activation of said first electrode segment to an nth current level corresponding to activation of an nth electrode segment

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with each sequential current source differing from each other by a factor divisible by 2 in a monotonically increasing series from said first electrode segment associated current source to said nth electrode segment associated current source.

14. (Original) A method for controlling the reflection of light from a plurality of reflective surfaces positionally controlled by an array of micromechanical actuators each comprising first and second spaced electrodes, at least one of which comprises a plurality of electrode segments, by wavefront delay according to displacement of each of said reflective elements in said array, said method comprising:

applying a potential to each of said first and second electrodes by selective activation of electrode segments thereof according to an intended displacement in a manner to linearize a transfer function between said potential and said displacement.

15. (Original) The method of claim 14 further including the step of varying the potential applied to said first and second electrodes linearly as a function of an intended displacement thereof.

16. (Original) A micromechanical apparatus having one or more electronically steerable structures comprising:

a set having:

a first electrode supported on a substrate;

a second electrode supported substantially parallel from said first electrode, said second electrode being flexible with respect to said first electrode whereby an electric potential applied between said first and second electrodes causes said first and second electrodes to move relative to each other a

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distance X, (X), where X is a nonlinear function of said potential, (V); and

means for linearizing the relationship between V and X.

17. (New) The apparatus of claim 3, wherein a plurality of sets of said first and second electrodes are arranged in a two-dimensional array.

18. (New) The apparatus of claim 17 further comprising a reflective element supported by said second electrode substantially at a point of maximum deflection thereof in response to said applied potential.

19. (New) The apparatus of claim 18 including means for applying a potential between first and second electrodes operative to reflect radiation over a range of angles corresponding to the deflection of each of said second electrodes in said array through phase delay wavefront steering.

20. (New) The apparatus of claim 18 including means for applying a potential between said first and second electrodes operative to reflect radiation over a range of phase adjustments corresponding to the deflection of each of said second electrodes in said array through delayed phase reflection.

21. (New) The apparatus of claim 19 wherein said linearizing means further includes means for applying said potential, V, to selected ones of said electrode segments.

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22. (New) The apparatus of claim 20 wherein said linearizing means further includes means for applying said potential, V, to selected ones of said electrode segments.

23. (New) The apparatus of claim 21 wherein said means for linearizing includes means for varying the applied potential as a function of gap between said first and second electrodes.

24. (New) The apparatus of claim 22 wherein said means for linearizing includes means for varying the applied potential as a function of gap between said first and second electrodes.

25. (New) The apparatus of claim 23 wherein said means for varying causes said potential to decrease as the spacing between said first and second electrodes decreases.

26. (New) The apparatus of claim 24 wherein said means for varying causes said potential to decrease as the spacing between said first and second electrodes decreases.

27. (New) The apparatus of claim 19 wherein:

said drive means further includes means for applying said potential, V, to selected ones of said electrode segments; and

means for varying the voltage applied to said electrode segments are provided to increase the voltage between said first and second electrodes in synchronism with the application thereof to respective ones of said electrode segments.

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28. (New) The apparatus of claim 25, further including means for varying the voltage applied to said electrode segments as a function of induced displacement comprising a plurality of current sources individually activated by digital signals synchronized to the activation of each of said plurality of segments, said current source increasing in magnitude from a first current level, corresponding to activation of said first electrode segment to an nth current level corresponding to activation of an nth electrode segment with each sequential current source differing from each other by a factor divisible by 2 in a monotonically increasing series from said first electrode segment associated current source to said nth electrode segment associated current source.

29. (New) The apparatus of claim 26, further including means for varying the voltage applied to said electrode segments as a function of induced displacement comprising a plurality of current sources individually activated by digital signals synchronized to the activation of each of said plurality of segments, said current source increasing in magnitude from a first current level, corresponding to activation of said first electrode segment to an nth current level corresponding to activation of an nth electrode segment with each sequential current source differing from each other by a factor divisible by 2 in a monotonically increasing series from said first electrode segment associated current source to said nth electrode segment associated current source.

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30. (New) The apparatus of claim 11, further including means for varying the voltage applied to said electrode segments as a function of induced displacement comprising a plurality of current sources individually activated by digital signals synchronized to the activation of each of said plurality of segments, said current source increasing in magnitude from a first current level, corresponding to activation of said first electrode segment to an nth current level corresponding to activation of an nth electrode segment with each sequential current source differing from each other by a factor divisible by 2 in a monotonically increasing series from said first electrode segment associated current source to said nth electrode segment associated current source.

31. (New) The apparatus of claim 12, further including means for varying the voltage applied to said electrode segments as a function of induced displacement comprising a plurality of current sources individually activated by digital signals synchronized to the activation of each of said plurality of segments, said current source increasing in magnitude from a first current level, corresponding to activation of said first electrode segment to an nth current level corresponding to activation of an nth electrode segment with each sequential current source differing from each other by a factor divisible by 2 in a monotonically increasing series from said first electrode segment associated current source to said nth electrode segment associated current source.

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